

SERVICE MANUAL
Level 1&2

NOKIA
X3-02

RM-639



Transceiver characteristics

Band
WCDMA: 850/900/1900/2100
GSM bands: 850/900/1800/1900

Display:
QVGA 262k colors, 2.4" touch

Camera:
5 Mpix full focus

Operating System:
Series 40 6th edition / Touch

Connections:
Micro USB A/B charger plug
2.0 mm DC charging plug
3.5 mm AV connector
Bluetooth version 2.1+EDR
MicroSD memory card

Transceiver with BL-4S battery pack

Talk time	Standby
GSM: Up to 5.3 hours	GSM: Up to 430 hours
WCDMA: Up to 3.5 hours	WCDMA: Up to 390 hours

Note:
Talk times are dependent on network parameters and phone settings

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CHANGE HISTORY

Status	Version No.	Date	Comments
Approved	1.0	30.07.2010	First approved version
Approved	2.0	18.08.2010	First published version. Added assembly picture story. Aligned disassy picture story and video.

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used only by authorized NOKIA service suppliers, and the content of it is confidential. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If you find any errors or if you have further suggestions, please notify NOKIA using the address below:

Nokia Care Academy
service.manuals@nokia.com

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

1. COPYRIGHT

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The availability of particular products may vary by region.

IMPORTANT

This document is intended for use by qualified service personnel only.

2. WARNINGS AND CAUTIONS

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

2.1 Warnings

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

2.2 Cautions

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly

3. ESD PROTECTION

Nokia requires that service points have sufficient ESD protection (against static electricity) when servicing the phone.



Any product of which the covers are removed must be handled with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.

To replace the covers ESD protection must be applied.

All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.

All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).

Every repair action involving opening the product or handling the product components must be done under ESD protection.

ESD protected spare part packages **MUST NOT** be opened/closed out of an ESD Protected Area.

For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.

4. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.

5. BATTERY INFORMATION

Note: A new battery's full performance is achieved only after two or three complete charge and discharge cycles! The battery can be charged and discharged hundreds of times but it will eventually wear out.

When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery. Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer.

Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime.

If left unused a fully charged battery will discharge itself over time. Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMH batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product).

Do not attempt to discharge the battery by any other means. Use the battery only for its intended purpose.

Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Shortcircuiting the terminals may damage the battery or the connecting object.

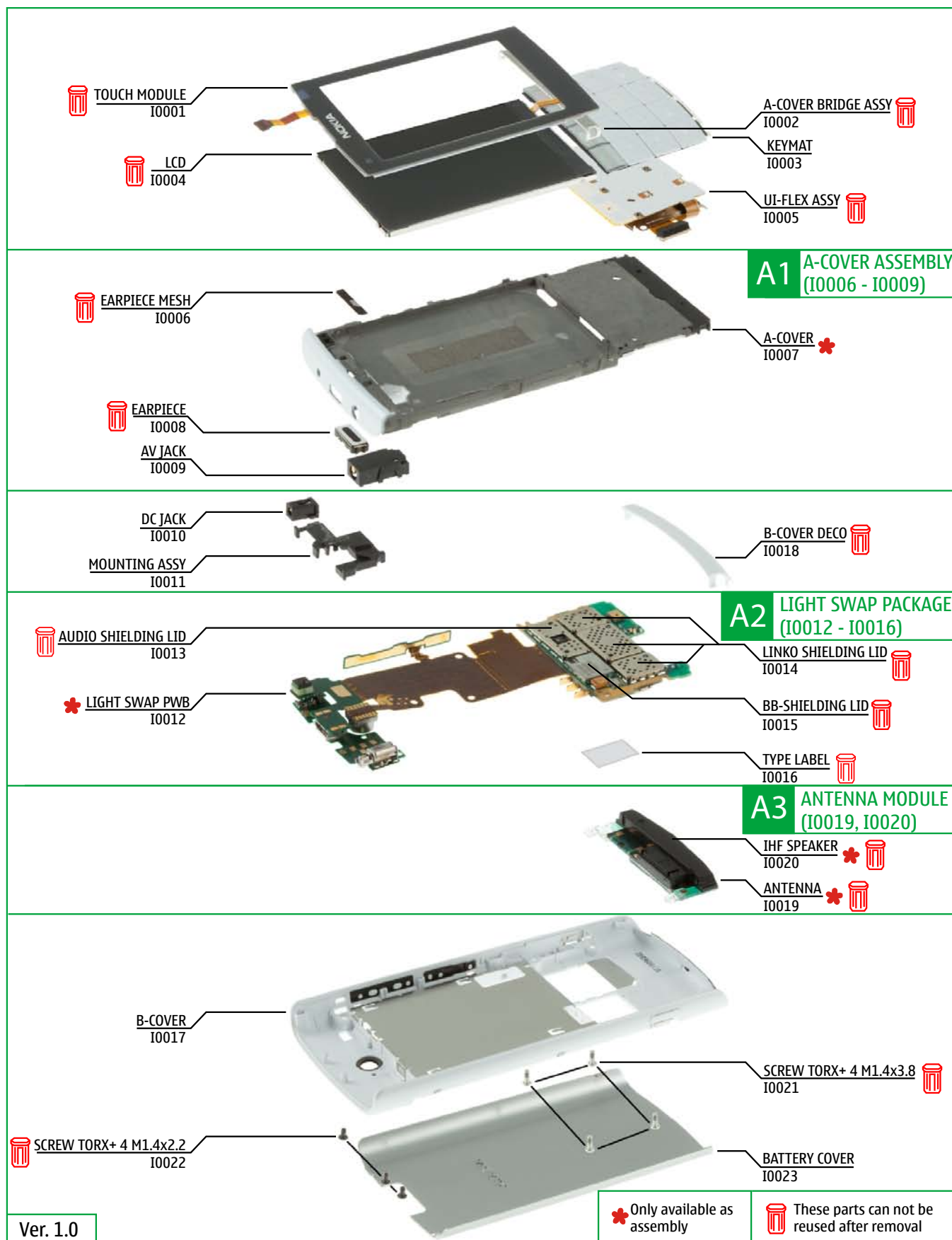
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.



Do not dispose of batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

Do not dispose as household waste.

6. EXPLODED VIEW



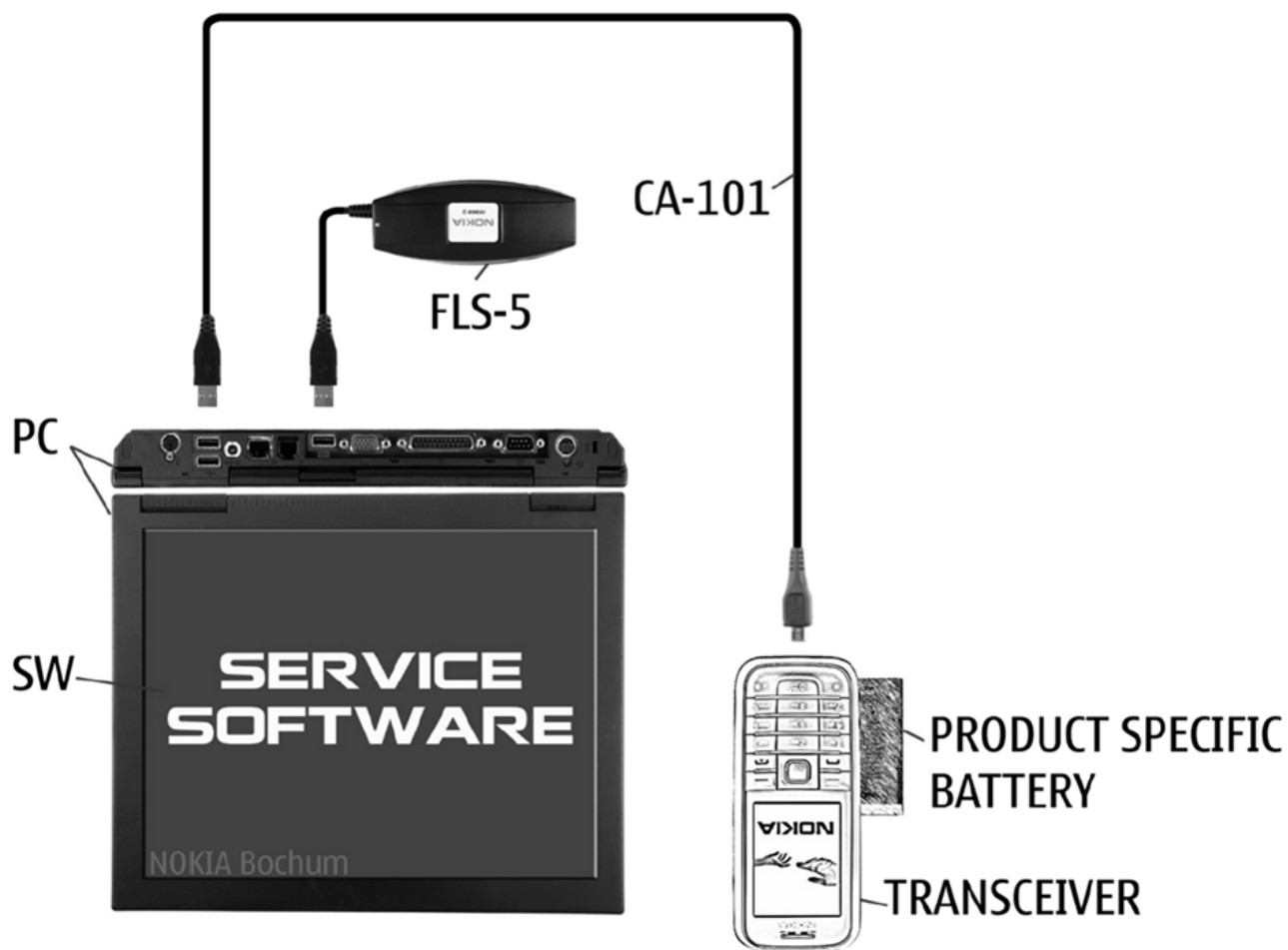
7. SERVICE DEVICES

 <p>FLS-5</p>		
FLS-5 Flash Device	CA-101D Service Cable	AC-15 Travel Charger
	 <p>Nokia Standard Toolkit (v2) For more information, refer to the Service Bulletin (SB-011) on Nokia Online. Supplier or manufacturer contacts for tool re-order can be found in “Recommended service equipment” document on Nokia Online.</p>	
BL-4S Battery		

8. SOFTWARE UPDATE

Flash concept (Point of Sale)

To use the FLS-5 Flash Dongle, follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on Nokia Online.



9. DISASSEMBLY INSTRUCTIONS



1) Nokia X3-02 disassembly.



2) You must use the Nokia Standard Toolkit version 2. You will also need the AV plug and the DC plug.



3) Protect the TOUCH MODULE with a protective film.



4) Push the BATTERY COVER release buttons on both sides.



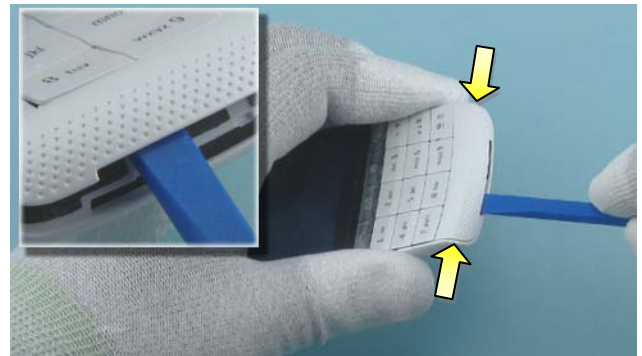
5) Lift up the BATTERY COVER. If there is a battery inserted remove it also.



6) Unscrew the three TORX+ size 4 screws in the order shown. Do not use them again!



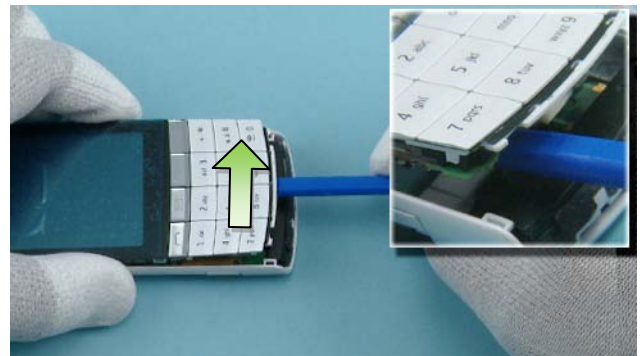
7) Unscrew the four TORX+ size 4 screws in the order shown. Do not use them again!



8) Use the SS-93 to release the B-COVER DECO clips on both sides.



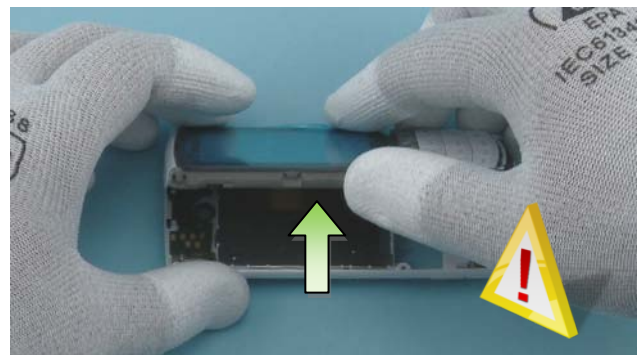
9) Remove the B-COVER DECO. Be careful not to damage the hooks holding the B-COVER. Do not use it again. Discard it.



10) Use the SS-93 to release the ENGINE BOARD from the B-COVER.



11) Release the top part of the A-COVER with the SRT-6.



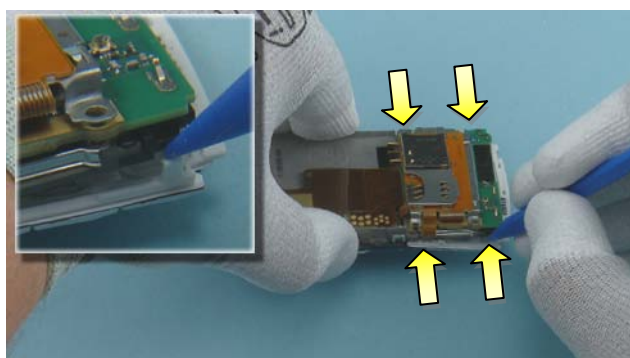
12) Carefully lift up the shown side of the phone.



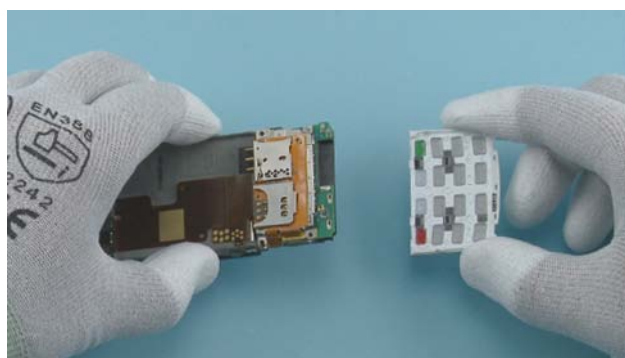
13) Carefully detach the top part of the ENGINE BOARD with the SS-93.



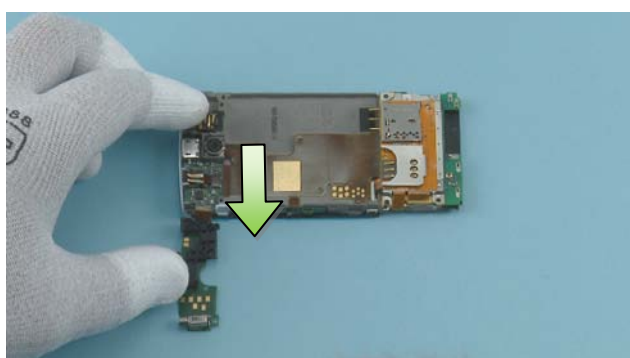
14) Separate the B-COVER ASSEMBLY.



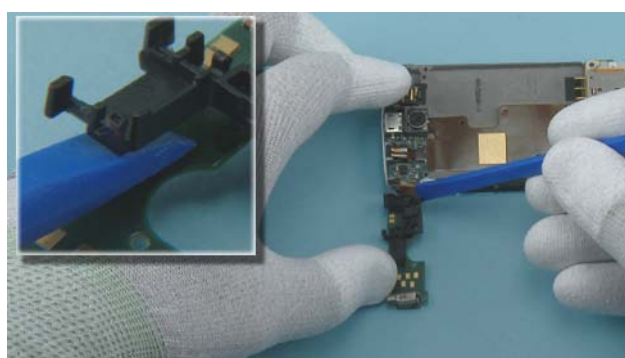
15) Release the four KEYMAT clips shown on both sides, with the sharp end of the SS-93.



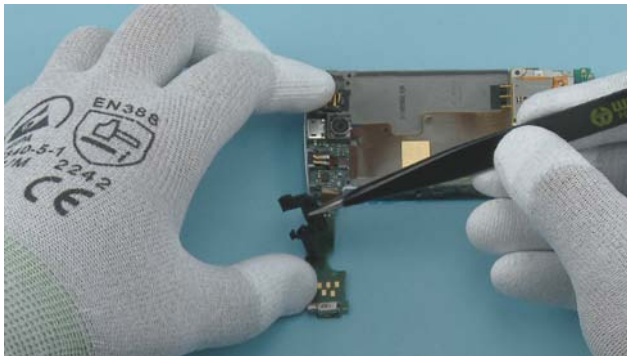
16) Remove the KEYMAT.



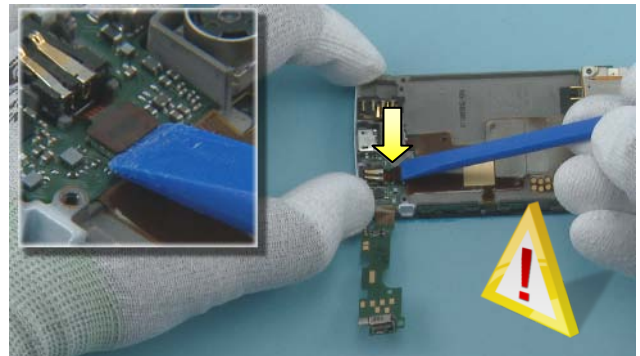
17) Turn over the shown part of the ENGINE BOARD.



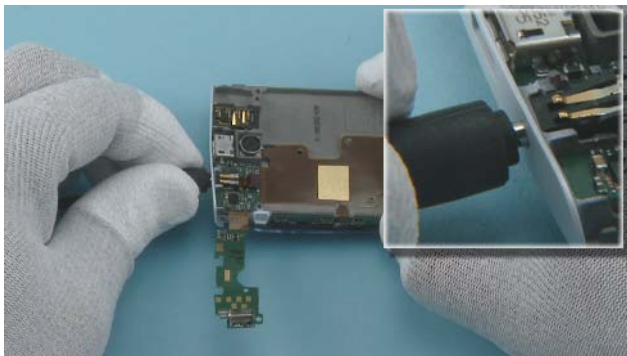
18) Use the SS-93 to release the MOUNTING ASSY.



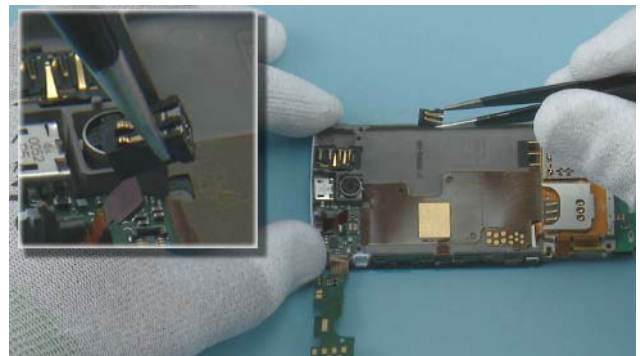
19) Remove the MOUNTING ASSY with the tweezers.



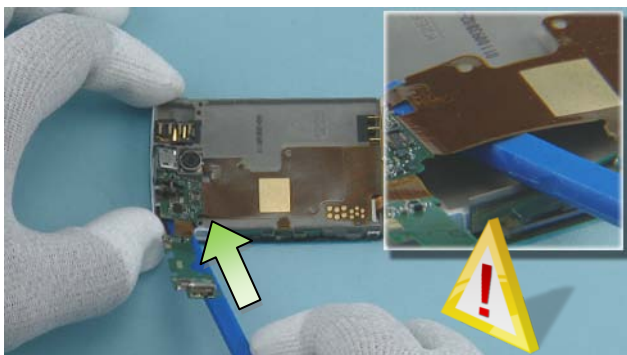
20) Use the SS-93 to release the TOUCH MODULE connector. Be careful not to damage the connector or any nearby components.



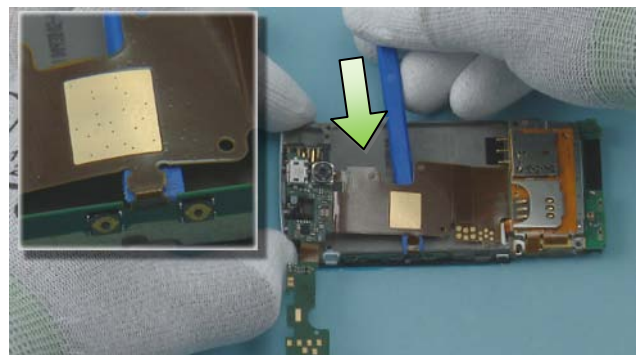
21) Use the DC plug to release the DC JACK.



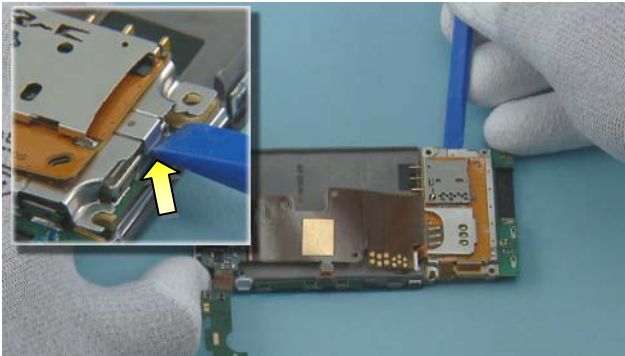
22) Remove the DC JACK with the tweezers.



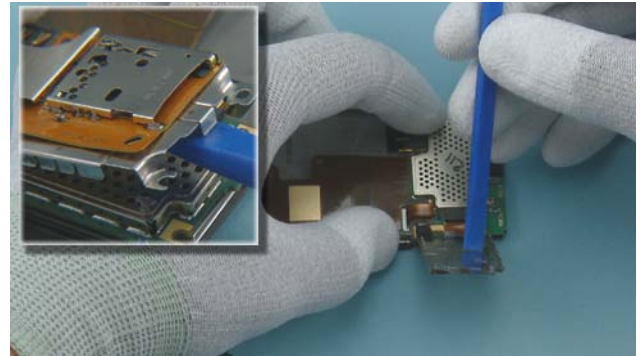
23) Push the SS-93 under the ENGINE BOARD and move the SS-93 to direction shown to release the ENGINE BOARD. Be very careful not to damage the flex!



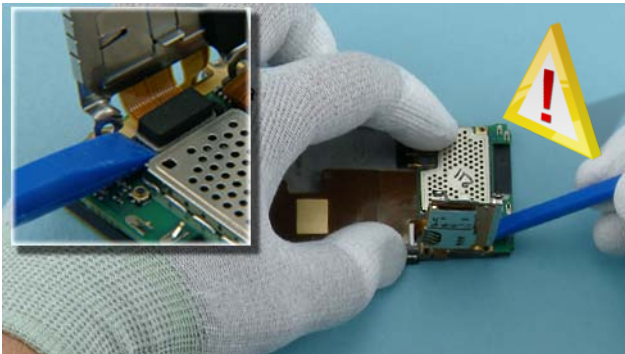
24) To release the SIDE KEY ENGINE BOARD, carefully push the SS-93 to the direction shown.



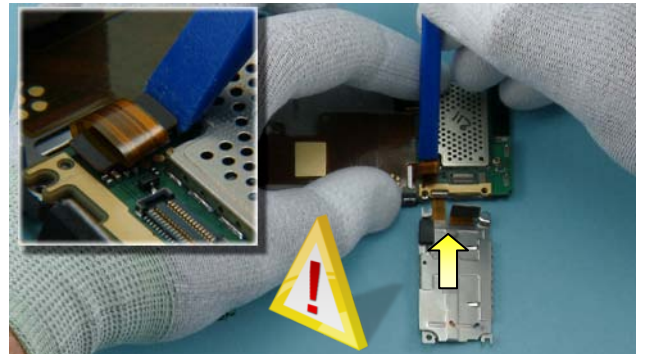
25) Use the SS-93 to release the clip holding the UI FLEX ASSY.



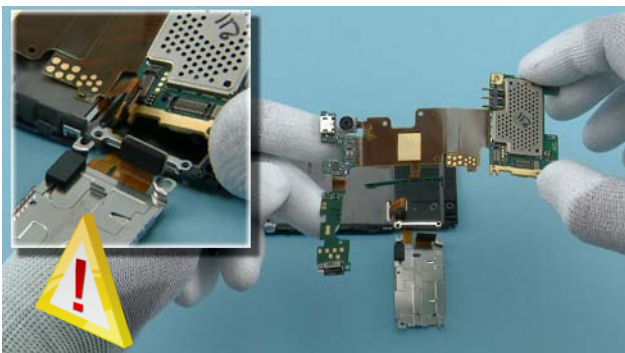
26) Turn over the UI-READER FLEX SHIELDING with the SS-93.



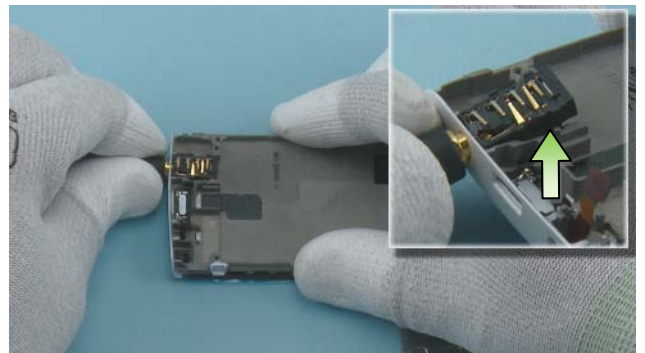
27) Open the UI connector with the SS-93. Be careful not to damage the connector or any nearby components.



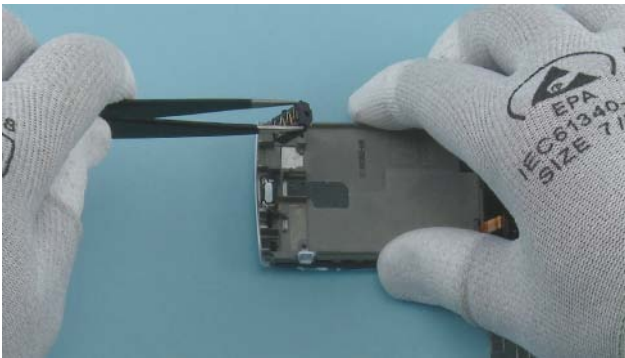
28) Use the SS-93 to release LCD connector. Be careful not to damage the connector or any nearby components.



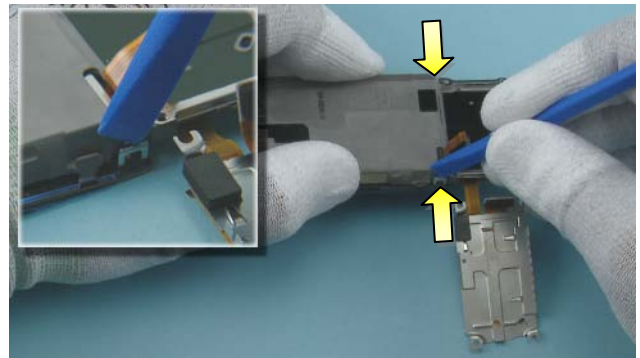
29) Remove the ENGINE BOARD. Be careful not to damage the LCD connector or any nearby components.



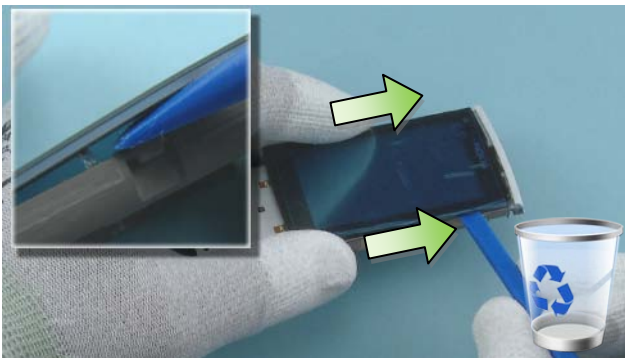
30) Lever out the AV JACK with an AV plug.



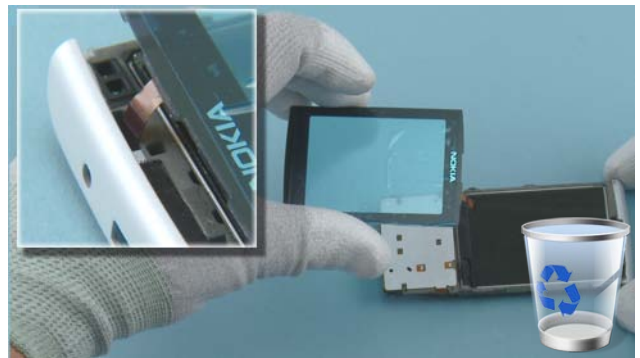
31) Remove the AV JACK with the tweezers.



32) Use the SS-93 to open the two shown A-COVER BRIDGE ASSEMBLY clips



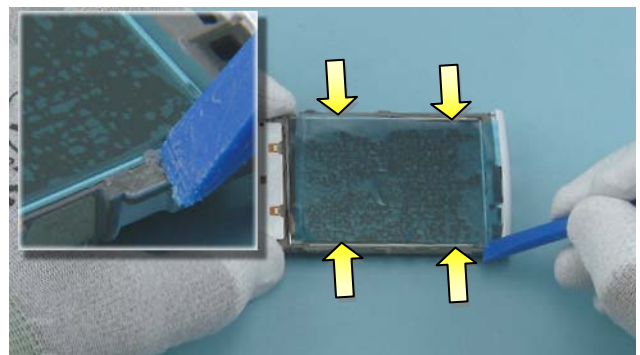
33) Slide the SS-93 to the directions shown to release the sides of the TOUCH MODULE.



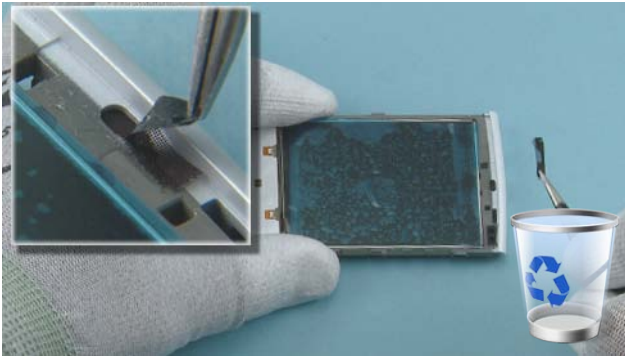
34) Pull the TOUCH MODULE connector through the opening and remove the TOUCH MODULE. Do not use it again. Discard it.



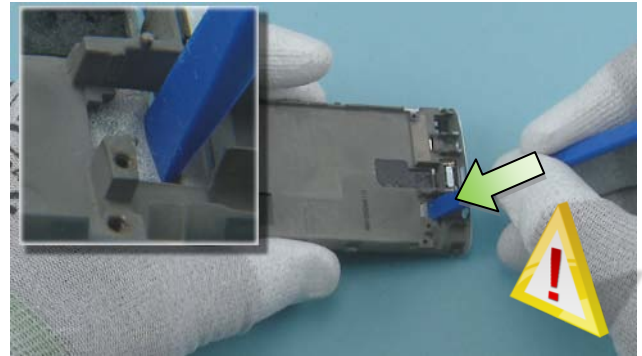
35) Protect the LCD with a protective film.



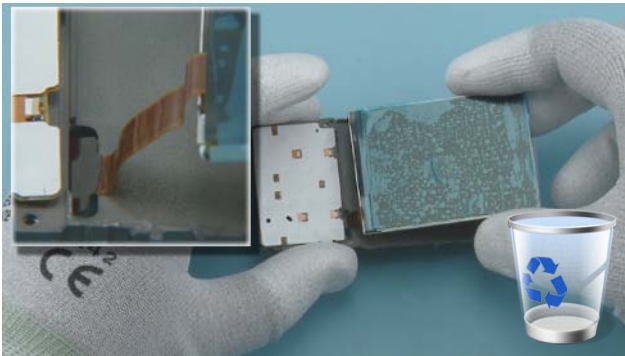
36) Remove the TOUCH MODULE ADHESIVE remains with the SS-93.



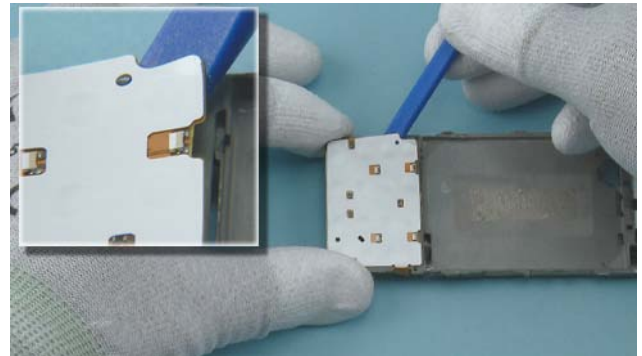
37) Remove the EARPICCE MESH with the tweezers. Do not use it again. Discard it.



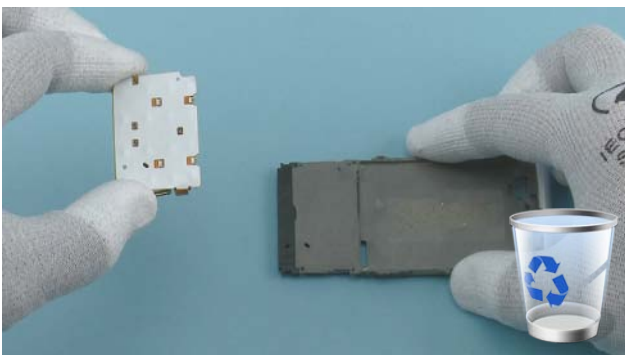
38) Push carefully the SS-93 through the opening to release the LCD.



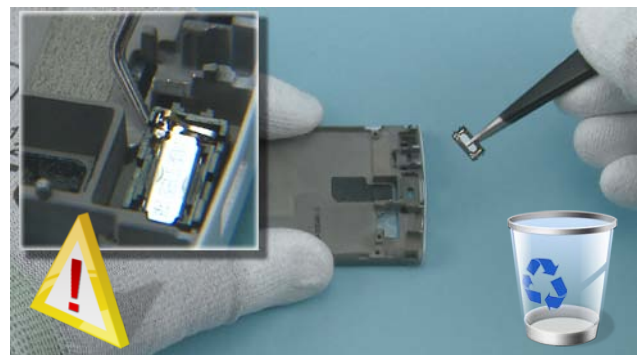
39) Pull the LCD connector through the opening and remove the LCD. Do not use it again. Discard it.



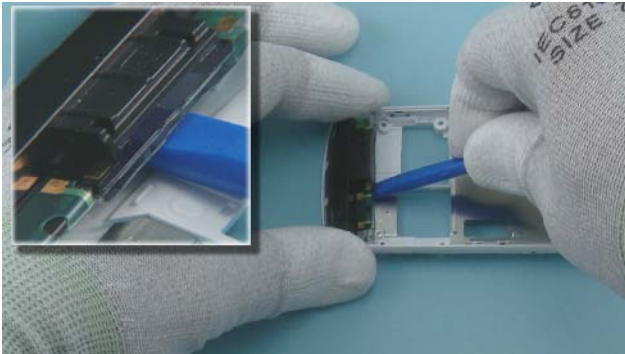
40) Use the SS-93 to release the UI FLEX ASSY.



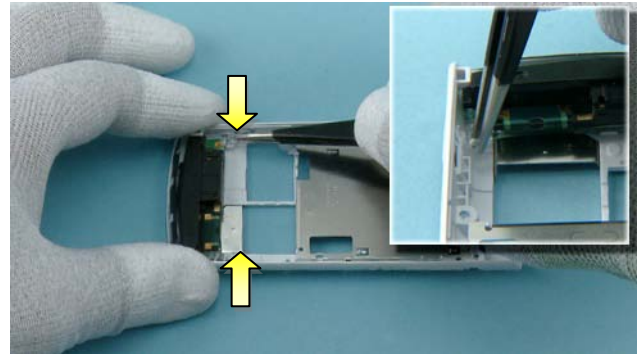
41) Remove the UI FLEX ASSY. Do not use it again. Discard it.



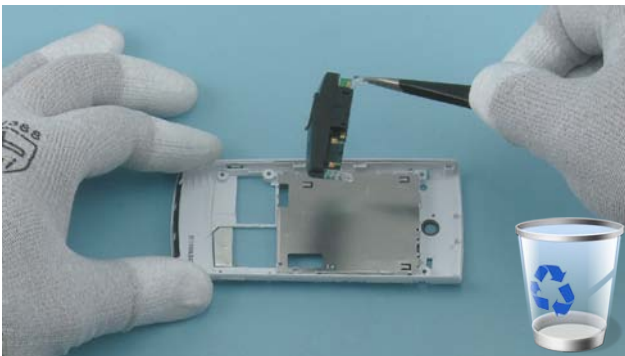
42) Use the dental tool to release the EARPICCE and remove it with the tweezers. Do not use it again. Remove also the EARPICCE adhesive residues. Be careful not to injure yourself with the sharp end of the dental tool!



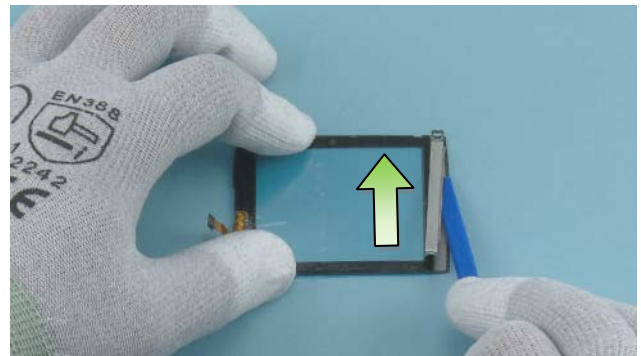
43) Use the SS-93 to release the ANTENNA.



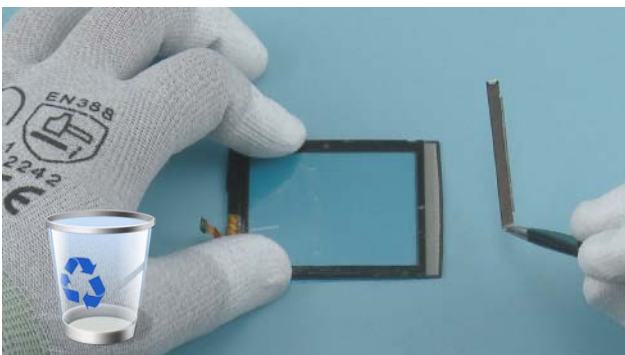
44) Pull the ANTENNA from the shown places with the tweezers to remove it.



45) Remove the ANTENNA with the tweezers. Do not use it again. Discard it.



46) Detach the A-COVER BRIDGE ASSEMBLY by sliding the SS-93 as shown.



47) Remove the A-COVER BRIDGE ASSEMBLY with the tweezers. Do not use it again. Discard it.



48) Nokia X3-02 disassembly is now complete.

-END OF DISASSEMBLY-

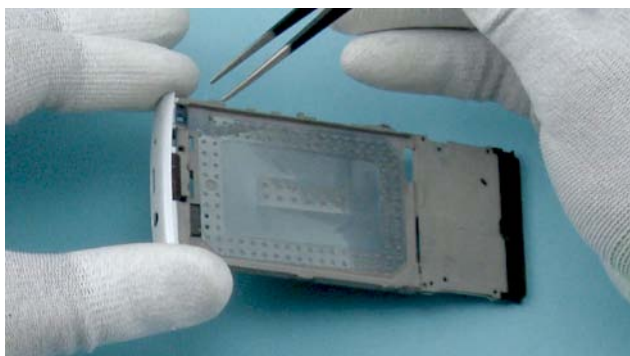
10. ASSEMBLY INSTRUCTIONS



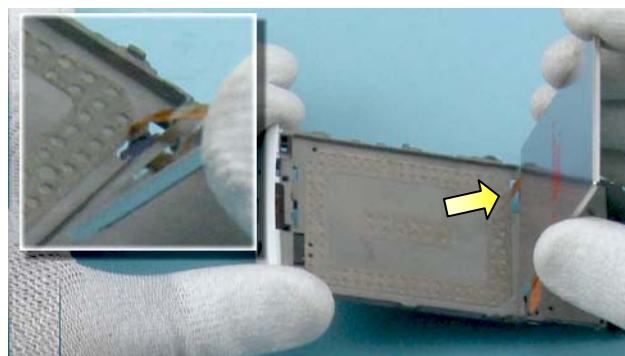
1) Nokia X3-02 assembly.



2) You must use the Nokia Standard Toolkit version 2.



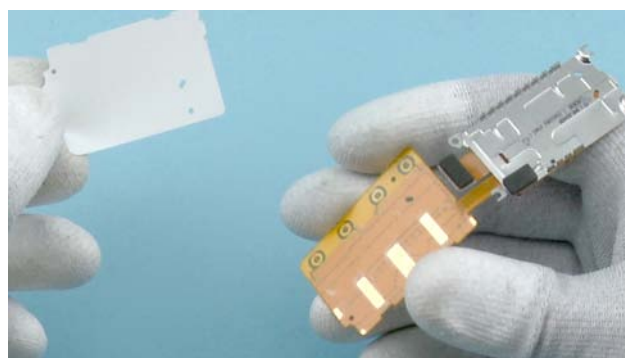
3) Remove the A-COVER adhesive protective film with the tweezers.



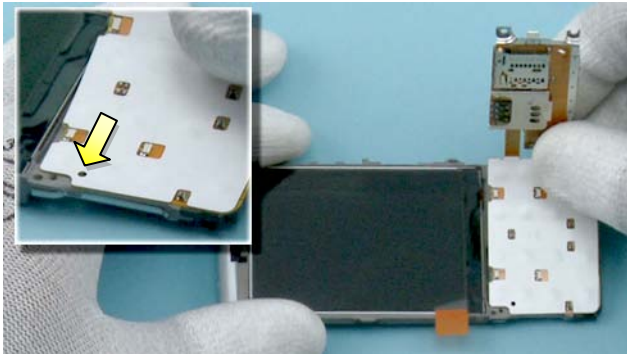
4) Push the LCD connector through the opening and lower down the LCD.



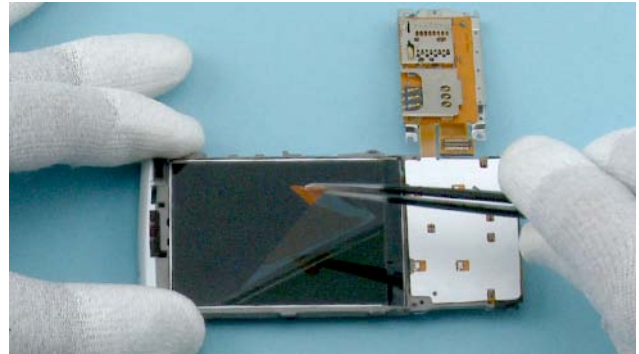
5) Press the sides of the LCD to activate the adhesive. Be careful not to damage the LCD.



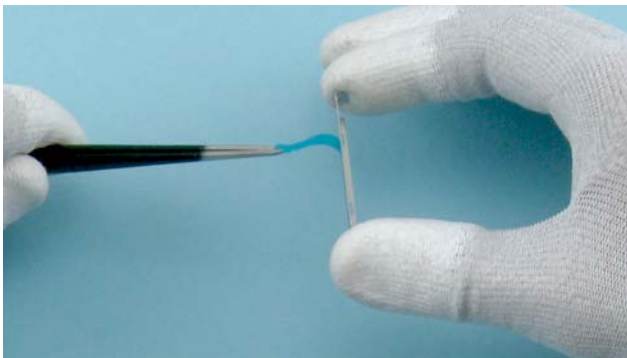
6) Remove the UI-FLEX ASSY adhesive protective film.



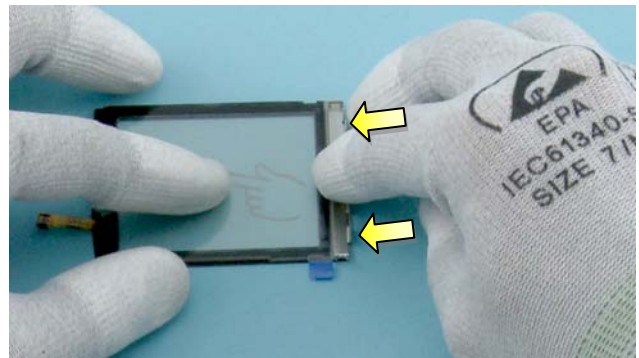
7) Place the UI FLEX ASSY to its place and make sure that the UI FLEX ASSY and the A-COVER holes are aligned.



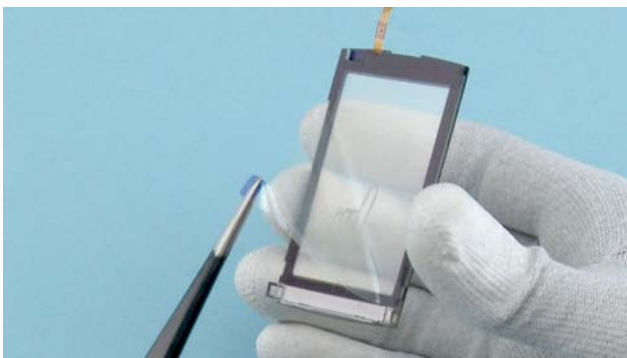
8) Remove the display protective film.



9) Remove the A-COVER BRIDGE ASSY adhesive protective film with the tweezers.



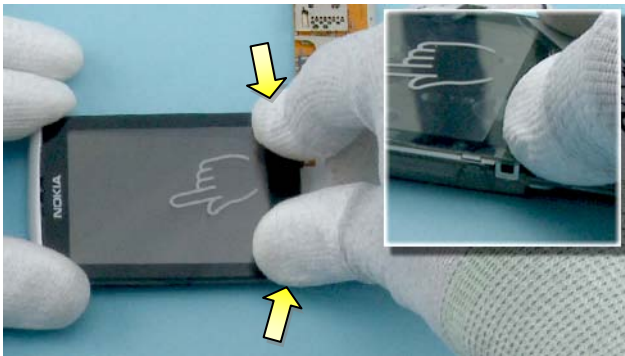
10) Place the A-COVER BRIDGE ASSY to the TOUCH MODULE and press it down to activate the adhesive. Make sure that the A-COVER BRIDGE ASSY tab is pointing outwards.



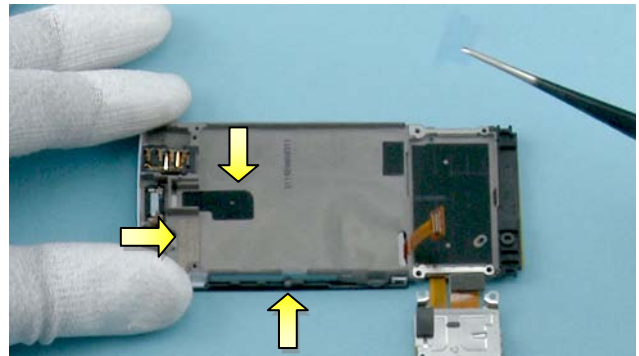
11) Remove the TOUCH MODULE protective film with the tweezers.



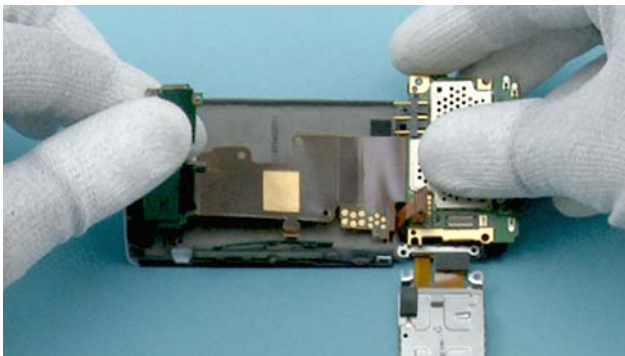
12) Push the TOUCH MODULE connector through the A-COVER opening. Be careful not to damage the connector.



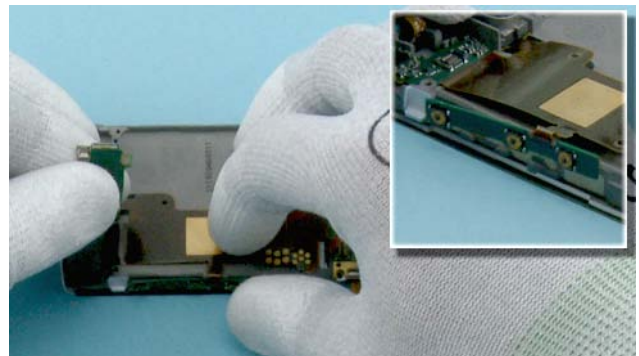
13) Lock up the shown clips by pressing both sides of the TOUCH MODULE. Continue to press the sides of the TOUCH MODULE to activate the adhesive.



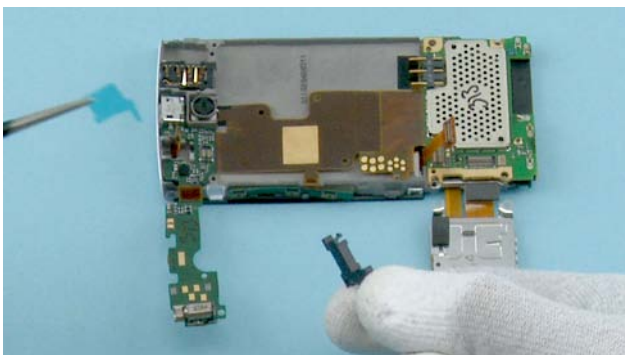
14) Remove the three adhesive protective films with the tweezers.



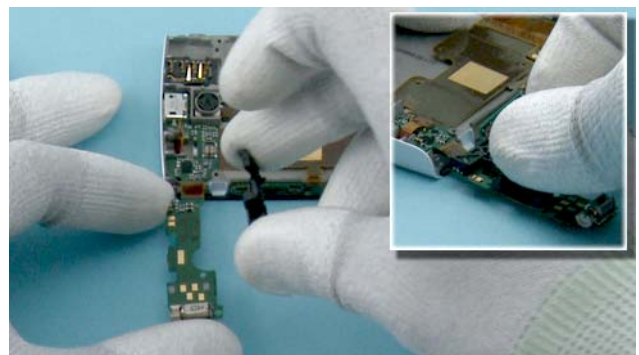
15) Place the MAIN FLEX carefully to its place and press it gently to activate the adhesive.



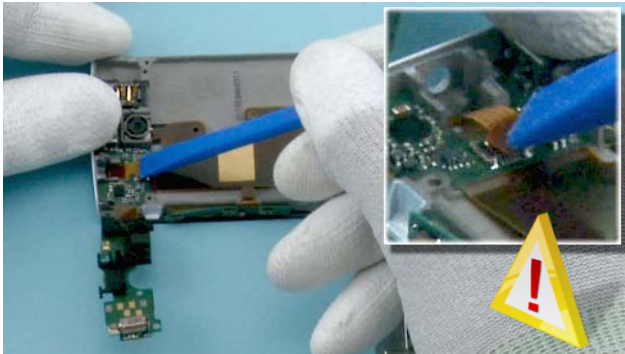
16) Place the side keys to its place and press it gently to activate the adhesive.



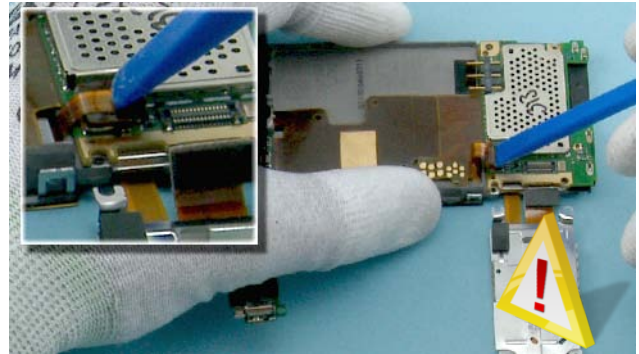
17) Remove the MOUNTING ASSY protective film.



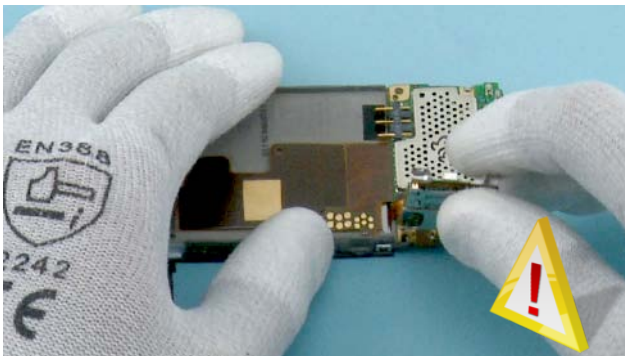
18) Place the MOUNTING ASSY to the MAIN FLEX and press it down to activate the adhesive.



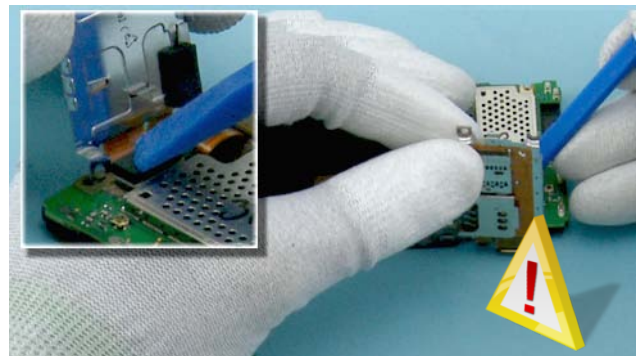
19) Connect the TOUCH MODULE CONNECTOR with the SS-93. Be careful not to damage the connector.



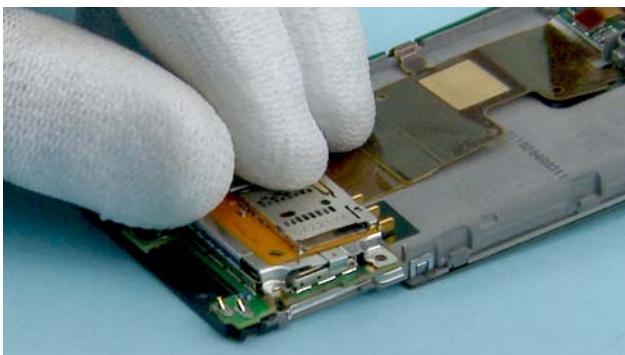
20) Connect the LCD CONNECTOR with the SS-93. Be careful not to damage the connector.



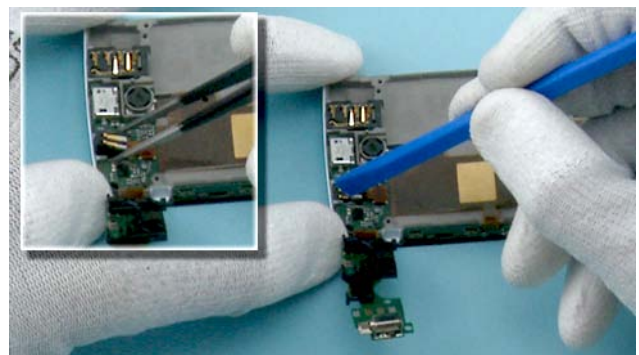
21) Lift up the SIM card reader. Be careful not to damage the connector behind it.



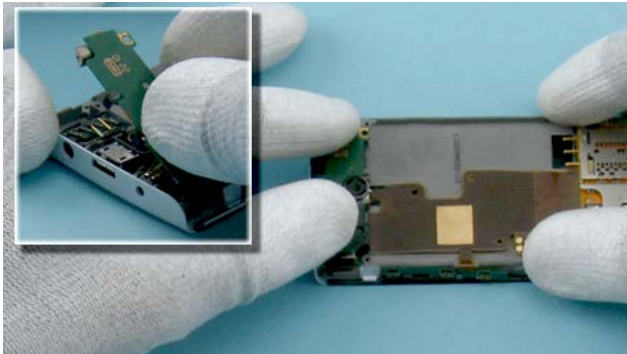
22) Connect the SIM card reader connector with the SS-93. Be careful not to damage the connector or any nearby components.



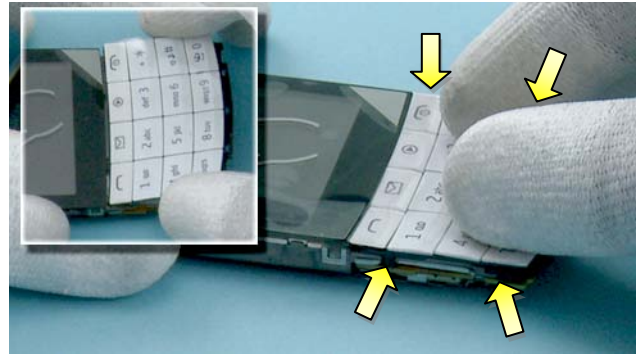
23) Lower the SIM card reader down and press it down to lock it to its place.



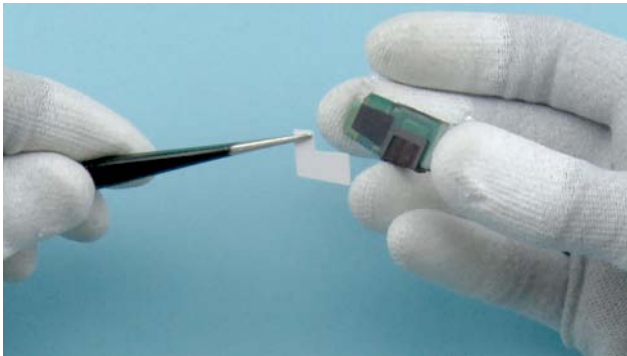
24) Place the DC JACK with the tweezers. Press the DC JACK to its place with the SS-93.



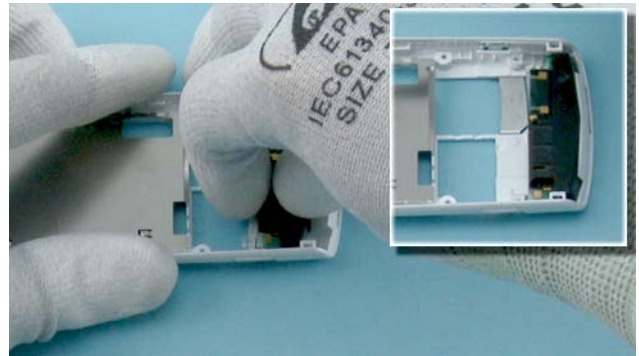
25) Turn the main flex over and gently press it to lock up. Be careful not to damage any nearby components.



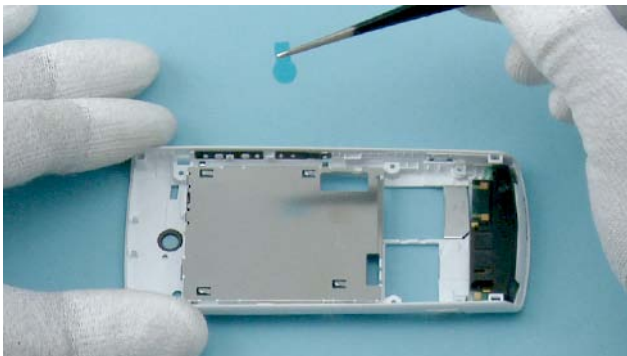
26) Place the KEYMAT to its place and press it to lock up the shown clips.



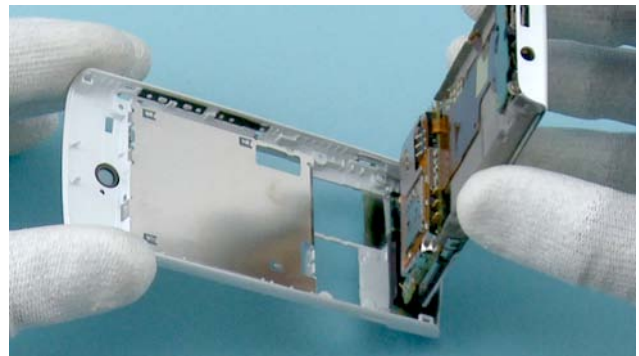
27) Remove the ANTENNA MODULE adhesive protective film with the tweezers.



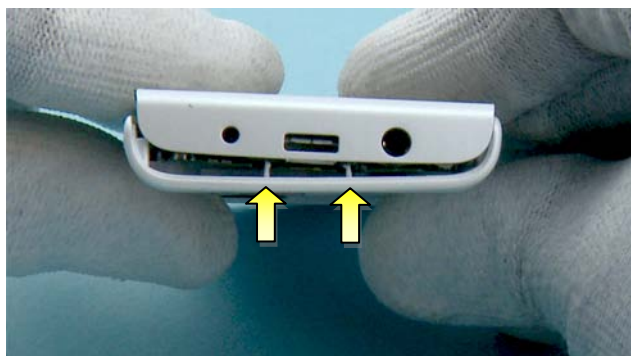
28) Place the ANTENNA MODULE to its place. Make sure that the adhesive surface is pointing towards the B-COVER. Press the ANTENNA MODULE to activate the adhesive.



29) Remove the camera lens protective film with the tweezers.



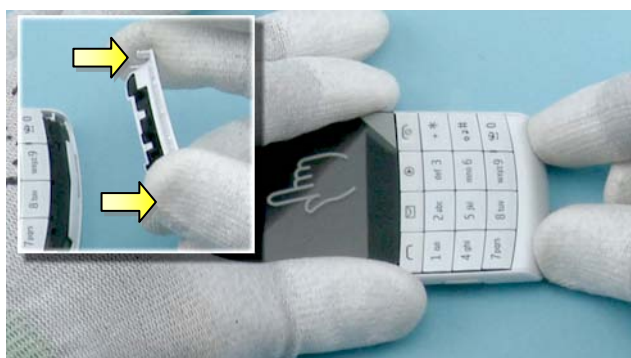
30) Place the A-COVER and the B-COVER together as shown.



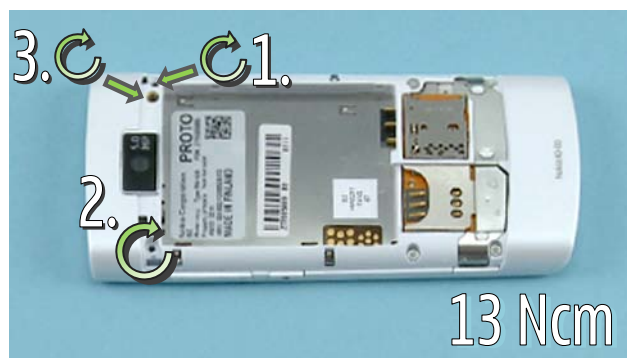
31) Lock up the shown clips by pressing covers together.



32) Remove the B-COVER DECO protective film with the tweezers.



33) Place the B-COVER DECO to its place and lock the shown clips by pressing it down.



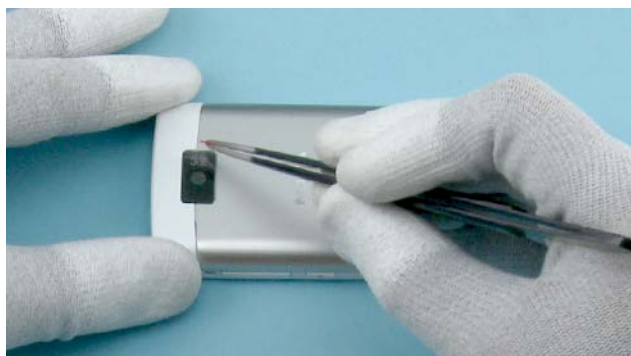
34) Tighten the three TORX + size 4 screws to the torque of 13 Ncm in the order shown.



35) Tighten the four TORX + size 4 screws to the torque of 13 Ncm in the order shown.



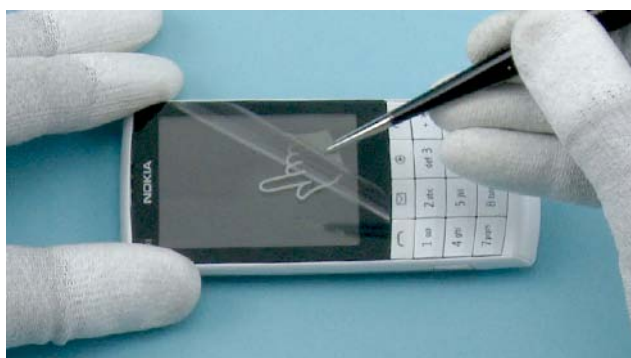
36) Place the battery cover from the camera side first and then lower the other end down. Press it down to lock up the shown clips.



37) Remove the camera protective film with the tweezers.



38) Remove the KEYMAT protective film with the tweezers.



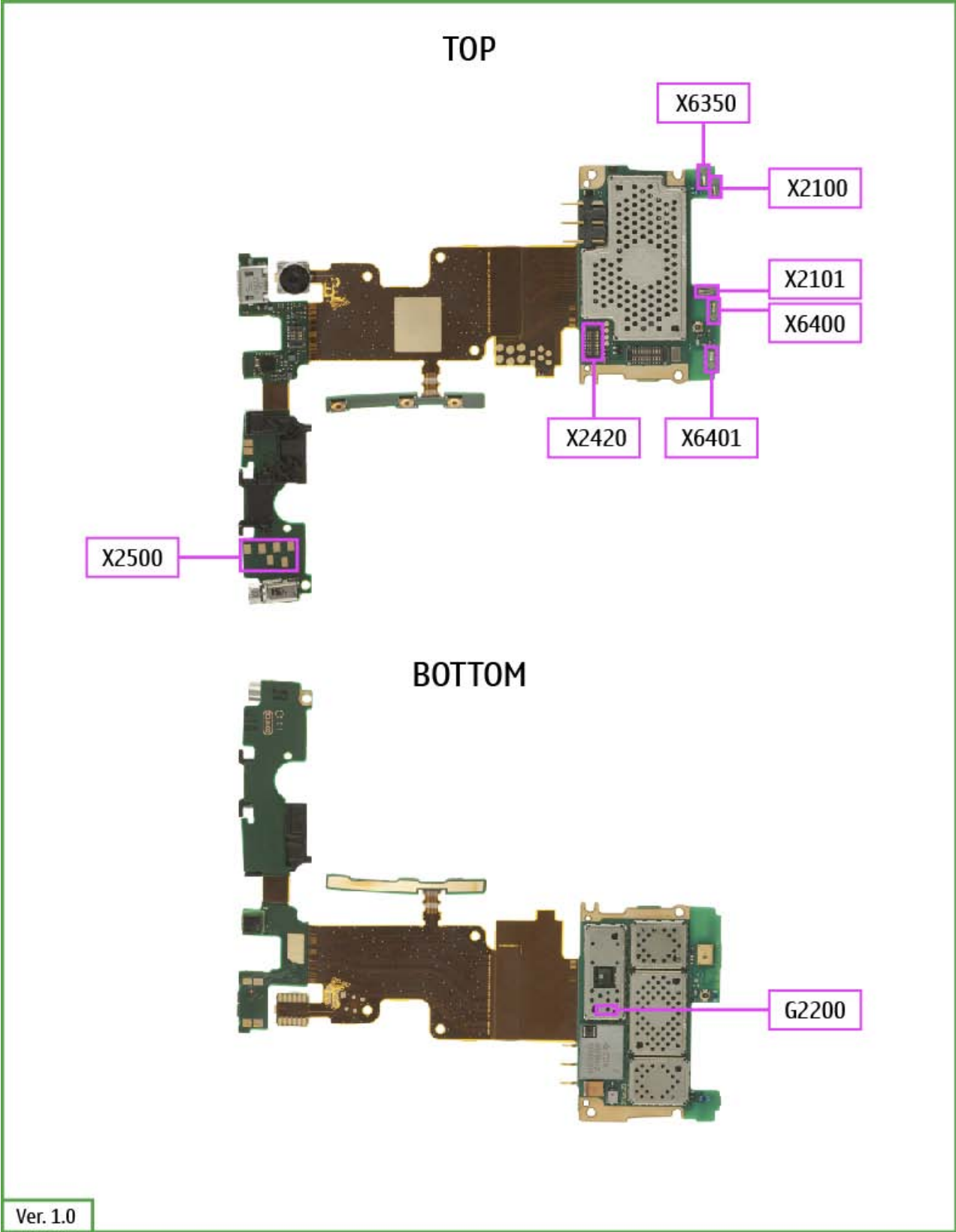
39) Remove the TOUCH MODULE protective film with the tweezers.



40) Nokia X3-02 assembly is now complete.

-END OF ASSEMBLY-

11. SOLDER COMPONENTS



Ver. 1.0